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European Military Mental Health Research: Benefits of Collaboration

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Abstract

Despite joint participation in international military operations, few collaborative military mental health research projects have been undertaken by European countries. From a common perspective of military mental health researchers from Germany and the United Kingdom (UK), the lack of shared research might be related not only to the use of different languages but also the different ways in which the two militaries provide mental health and medical support to operations and differences in military institutions.

One area that is suitable for military health research collaboration within UK and German Forces is mental health and wellbeing among military personnel. This could include the study of resilience factors, the prevention of mental disorder, mental health awareness, stigma reduction and the treatment of mental disorder. Military mental health research topics, interests and the studies that have been conducted to date in the UK and Germany have considerable overlap and commonality of purpose.

To undertake the investigation of the long-term consequences of operational deployment, the specific burdens placed upon military families, and to further the understanding of the role of factors such as biomarkers for use in military mental health research, it seems advisable to forge international research alliances across European nations which would allow for researchers to draw trans-cultural and generalizable conclusions from their work.

Such an enterprise is probably worthwhile given the shared research interests of Germany and the UK and the common perspectives on military mental health in particular.

Key words: Military mental health, European research, prevention, treatment, long-term effects, deployment.

Preliminary remarks

Almost every European country contributes forces to shared international military operations, such as the International Security Assistance Force (ISAF) in Afghanistan, deployment during the Balkan wars of the 1990s and the campaigns in Iraq. However, apart from the few joint studies carried out under the umbrella of the North Atlantic Treaty Organization's (NATO) Research and Technology Organisation (RTO), European collaborative military mental health research is limited.

Researchers in the United Kingdom (UK) and the United States of America (US) who both speak English as their native language have established wide-ranging scientific relationships while undertaking military mental health research which is reflected in multiple publications (e.g. [1]).

A limited number of high-quality military mental health research papers from countries where English is not the native language have been published in international English-language journals (e.g. [2, 3]). However, high quality scientific literature has been published by researchers from European countries exclusively in their national language (e.g. [4]). In other areas of mental health research such as affective disorder studies, suicide prevention or genetics, there are a substantial number of international English-language research articles that have been published from different European countries. This is less evident for military studies. It could be the case that the field of military mental health research is less accessible and less well-resourced across Europe, and that this issue has led to fewer opportunities for European collaboration.

Historical developments

Britain experienced a resurgence of interest in military mental health in the mid-1990s mainly related to concern for the health of those who had taken part in the 1990/1991 Gulf Campaign. Military mental health also became an issue in the context of prolonged military operations in the former Yugoslavia and ongoing deployment in Northern Ireland.

As a consequence of the Gulf conflict, the Medical Assessment Programme (MAP) was established in 1993 at St Thomas' Hospital in London to examine the health of UK Gulf veterans; in recent years the role of the MAP has been extended to encompass other groups of ex-service personnel.

In 1996 researchers at King’s College London began to study the health and wellbeing of UK Gulf War veterans and in 2002 formed the King’s Centre for Military Health Research (KCMHR) at the Institute of Psychiatry, Psychology and Neuroscience (IoPPN) in London.

This unit was formed to carry out mental health and limited general health surveillance in anticipation of operations in Iraq in an attempt to ensure that operational mental health was properly studied from the onset of the new deployment. The research was further extended to incorporate the expansion of operations in Afghanistan. The unit has now emerged as the major military psychiatry research institute in the UK which is mainly financed by major research grants from the British government with funding for specific projects from the United States (US) government, through competitive research grants and by King's College London. It now hosts the Academic Department of Military Mental Health, which provides a specific focus for deployment mental health research.

Since the end of the Second World War until 1999, Germany's Armed Forces, the *Bundeswehr* – in contrast to the UK Armed Forces – took part only in peacekeeping missions. In 1999, the German military took part in the Kosovo War, and since 2001, Germany engages with other European nations in ISAF. However, participation in military intervention of this kind has resulted in an increase in the number of soldiers suffering from reactions to severe stress and adjustment disorders. Therefore, the German Ministry of Defence founded the Centre for Psychiatry and Psychotraumatology (Zentrum für Psychiatrie und Psychotraumatologie) in 2010 with the aim of researching and developing the treatment of affected soldiers at the Hospital of the German Armed Forces in Berlin [5]. It is mainly financed by the German Ministry of Defence [5]. As part of the German Armed Forces, the Centre for Psychiatry and Psychotraumatology has direct access to military databases and data sets.

Though KCMHR in London and the German Centre for Psychiatry and Psychotraumatology in Berlin are the main national institutions where military mental health research is carried out, the organisations differ significantly in a number of respects. The most obvious difference is that the German Centre for Psychiatry and Psychotraumatology is not embedded in a university, employs mainly soldiers with few scientists, and is mainly tasked to produce data for the ministry of defence and the public. Its prime purpose is therefore not to publish papers in scientific journals but to generate internal reports, whereas KCMHR is a department of King's College London and consists of researchers eager to publish in high-ranking journals and to make a scientific career. KCMHR does however host a uniformed department consisting of a small number of military researchers whose task is to provide the UK Ministry of Defence with sound military mental health data.

Common current research topics

Mental disorders among military personnel: Investigating and reporting the prevalence of key mental disorders is a fundamental common endeavour of Britain's [6] as well as Germany's [7] military mental health research. This research takes a broader perspective than examining the influence of deployment upon mental health alone, which was a key research question explored in British studies performed by KCMHR with respect to the 1991 Gulf, Iraq and the recent Afghanistan conflicts [1, 8, 9]. A similar perspective has been taken in German studies which also focused upon the mental health consequences of deployment [2, 10]. Interestingly, researchers in both countries found that for military personnel, post-traumatic stress disorder (PTSD) and stress-related problems were not the main mental health consequences of deployment, but other sequelae such as common psychiatric problems including affective disorders, anxiety and substance-related disorders frequently develop following deployment [3, 11].

Resilience factors and prevention: Factors for resilience have been widely studied both in Britain and Germany. Whereas in Britain, baseline mental health, pre-deployment psychoeducation, perceptions of good leadership and family support were studied as factors influencing resilience, in Germany, specific patterns of attentional bias and personal values were investigated as determinants of resilience [12-14].

With regard to the prevention of mental health disorder, a maximum length of deployment of six months with adequate phases of rest and recuperation were evaluated in the UK [15, 16]. Preventative programmes have been evaluated, such as Third Location Decompression (TLD), which is an activity undertaken by UK Armed Forces personnel at the end of an operational deployment [17], and a German computer-based prevention tool [18] administered prior to deployment and an inpatient preventive treatment programme for German soldiers returning from deployment [19].

Awareness, stigma and treatment: Further common research topics include awareness of psychiatric disorders and stigmatisation and perceived barriers to care relating to mental health in the military, which often influences or is associated with access to and utilization of treatment; these issues have been investigated by both country's military researchers [20, 21].

At KCMHR in London as well as at the Centre for Psychiatry and Psychotraumatology in Berlin, psychotherapeutic treatment programs for post-traumatic stress disorder (PTSD) have been positively evaluated [22, 23]. However, the British study was performed with outpatients [22], whereas the comparable German study treated the soldiers suffering from PTSD as in-patients [23].

German treatment studies for soldiers suffering from PTSD notwithstanding, few psychotherapeutic or psychopharmacological studies have been completed whereas epidemiology-based military studies have tended to predominate.

Future common research perspectives

Given that there is considerable overlap in research topics and interests in Germany and the UK, the use of a shared approach using common research instruments and methodologies could potentially provide an opportunity to compare different preventive and therapeutic programmes between the countries. Such an approach could potentially improve efficiency and could help military researchers to draw cross-cultural and more generalizable conclusions from their studies.

The existing clinical and broader military cohorts available to researchers in both countries could potentially be used to investigate the long-term mental health consequences of deployment and the psychological impact of military life.

The families of military personnel carry specific burdens such as providing care for wounded, injured or sick military personnel. Their wellbeing and life satisfaction might be affected by factors such as multiple relocations, military personnel's national and worldwide training commitments and operational deployments. Additionally, there is some UK evidence that deployment increases the risk of violent offending [24], however, whether a job that entails the deliberate use of force has any association with domestic violence is largely unknown but is the subject of a new research programme within KCMHR. Although aggression, violence and offending have been partially addressed by military mental health researchers in the UK, systematic research is still lacking and there is even less research conducted among German forces.

Psychosocial research has tended to dominate the European research effort, however, a modern biomarker research programme encompassing genetics, epigenetics, gene expression and cytokine measurement, therapeutic drug monitoring (TDM), neuroimaging, and neurophysiological measures has not yet been systematically applied to military mental health research. The first steps have been taken in the form of the German Armed Forces PTSD biomarker study which is searching for molecular and imaging PTSD risk and resilience markers [25].

The preceding discussion suggests that European military mental health research is not always conducted in relatively independent universities such as King's College London with the aim of producing peer-reviewed research. It may take place within a wholly military

establishment, which is currently the case in Germany where the outcome of research is to provide data primarily for the public and the national ministry of defence. However, our initial discussions suggest that language barriers, structural differences, historical boundaries and institutional circumstances could be overcome with some initial effort and could provide the opportunity to forge binational or even pan-European alliances for military mental health research. Following our initial contact we are firstly planning to adapt the translated KCMHR questionnaire "Health & well-being survey of serving & ex-serving members of the UK Armed Forces" to render it suitable for use in a German military context. Our German military researcher colleagues have decided to use this adapted questionnaire for an initial evaluation of German United Nations military inspectors. The evaluation will take place in the United Nations Training Center in Hammelburg, Germany, as part of a running quality monitoring project and will take place in the second half of 2016. Using a cohort design, the survey of the participants will be repeated at intervals of 36 months.

Following initial contact between German and UK military mental health researchers, we agreed to generate a programme comparing the outcomes of both current and completed studies such as the "German Armed Forces PTSD biomarker study" (Schmidt, et al. 2015) and data extracted from KCMHR "Health & well-being survey of serving & ex-serving members of the UK Armed Forces".

Concluding Remarks

Despite clear differences in the way in which Germany and the UK structure and resource their military mental health research efforts, there are sufficient similarities for us to propose that some areas of joint working are possible. Through collaboration, shared research projects could be undertaken that will benefit both nations and perhaps pave the way for further European military mental health research collaboration.

References

1. Sundin J, Herrell RK, Hoge CW, et al. Mental health outcomes in US and UK military personnel returning from Iraq. *Br J Psychiatry* 2014; 204: 200-7.
2. Bandelow B, Koch M, Zimmermann P, et al. Posttraumatic stress disorder (PTSD) in the German Armed Forces: a retrospective study in inpatients of a German army hospital. *Eur Arch Psychiatry Clin Neurosci* 2012; 262: 459-67.
3. Trautmann S, Schönfeld S, Behrendt S, et al. Stress exposure and the risk for the onset of alcohol use disorders and nicotine dependence in deployed military personnel: the role of prior internalizing disorders. *Addict Behav* 2015; 43: 89-96.
4. Zimmermann P, Höllmer H, Guhn A, et al. Predictors of suicidality in German soldiers. *Nervenarzt.* 2012; 83: 359-65.
5. Zimmermann P. Psychosoziale Forschungs- und Versorgungsstrukturen der Bundeswehr. Wehrmedizin und Wehrpharmazie 2011; 36: 42-45.
6. Stevelink SA, Malcolm EM, Mason C, Jenkins S, Sundin J, Fear NT. The prevalence of mental health disorders in (ex-)military personnel with a physical impairment: a systematic review. Occup Environ Med 2015; 72: 243-251.
7. Trautmann S, Goodwin L, Höfler M, Jacobi F, Strehle J, Zimmermann P, Wittchen HU. Prevalence and severity of mental disorders in military personnel: a standardised comparison with civilians. *Epidemiol Psychiatr Sci* 2016, Epub.
8. Ismail K, Kent K, Brugha T, et al. The mental health of UK Gulf war veterans: phase 2 of a two phase cohort study. *BMJ* 2002; 325: 576.
9. Fear NT, Jones M, Murphy D, et al. What are the consequences of deployment to Iraq and Afghanistan on the mental health of the UK armed forces? A cohort study. *Lancet* 2010; 375: 1783-97.
10. Wittchen HU, Schönfeld S, Kirschbaum C, et al. Traumatic experiences and posttraumatic stress disorder in soldiers following deployment abroad: how big is the hidden problem? *Dtsch Arztebl Int* 2012; 109: 559-68.
11. Iversen AC, van Staden L, Hughes JH et al. The prevalence of common mental disorders and PTSD in the UK military: using data from a clinical interview-based study. *BMC Psychiatry* 2009; 9: 68.
12. Sharpley JG, Fear NT, Greenberg N, Jones M, Wessely S. Pre-deployment stress briefing: does it have an effect? *Occup Med* 2008; 58: 30-4.

13. Jones N, Seddon R, Fear NT, McAllister P, Wessely S, Greenberg N. Leadership, cohesion, morale, and the mental health of UK Armed Forces in Afghanistan. *Psychiatry* 2012; 75: 49-59.
14. Zimmermann P, Firnkes S, Kowalski J, et al. Mental disorders in German soldiers after deployment - impact of personal values and resilience. *Psychiatr Prax* 2015; 42: 436-42.
15. Rona RJ, Jones M, Keeling M, et al. Mental health consequences of overstretch in the UK Armed Forces, 2007-09: a population-based cohort study. *Lancet Psychiatry* 2014; 1: 531-8.
16. Parsloe L, Jones N, Fertout M, et al. Rest and recuperation in the UK Armed Forces. *Occup Med* 2014; 64: 616-21.
17. Jones N, Jones M, Fear NT, et al. Can mental health and readjustment be improved in UK military personnel by a brief period of structured postdeployment rest (third location decompression)? *Occup Environ Med* 2013; 70: 439-45
18. Wesemann U, Kowalski J, Jacobsen J, et al. Evaluation of a technology-based adaptive learning and prevention program for stress response – a randomized controlled trial *Mil Med* 2015; in print.
19. Zimmermann P, Kowalski J, Niggemeier-Groben A, et al. Evaluation of an inpatient preventive treatment program for soldiers returning from deployment. *Work* 2015; 50: 103-10.
20. Jones N, Keeling M, Thandi G, et al. Stigmatisation, perceived barriers to care, help seeking and the mental health of British Military personnel. *Soc Psychiatry Psychiatr Epidemiol* 2015; 50: 1873-83.
21. Kowalski JT, Hauffa R, Jacobs H, et al. Deployment-related stress disorder in german soldiers: utilization of psychiatric and psychotherapeutic treatment. *Dtsch Arztebl Int. 2012*; 109: 569-75.
22. Murphy D, Hodgman G, Carson C, et al. Mental health and functional impairment outcomes following a 6-week intensive treatment programme for UK military veterans with post-traumatic stress disorder (PTSD): a naturalistic study to explore dropout and health outcomes at follow-up. *BMJ Open* 2015; 5: e007051.
23. Zimmermann P, Kröger N, Willmund G, et al. In-patient, short-term group psychotherapy - a therapeutic option for Bundeswehr soldiers? *Psychosoc Med* 2008; 5: 11.
24. MacManus D, Dean K, Jones M, et al. Violent offending by UK military personnel deployed to Iraq and Afghanistan: a data linkage cohort study. *Lancet* 2013; 381: 907-17.

25. Schmidt U, Willmund GD, Holsboer F, et al. Searching for non-genetic molecular and imaging PTSD risk and resilience markers: Systematic review of literature and design of the German Armed Forces PTSD biomarker study. *Psychoneuroendocrinology* 2015; 51: 444-58.